REMARKS/ARGUMENTS

Favorable reconsideration of this application, as presently amended and in light of the following discussion is respectfully requested.

Claims 1-4, 6-8, 10, 12-18, and 21-23 are pending in the application. Claims 5 and 9 have been presently cancelled without prejudice or disclaimer. Claims 1, 6, 10, 12, 13, and 21 have been presently amended. No new matter is presented.

In the Office Action, Claims 1-10, 12-18, and 21-23 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Marumo et al. (U.S. Patent Publication No. 2003/0000458, hereinafter, "Marumo") in view of Ju et al. (KR Patent Publication 2007-0020879, hereinafter, "Ju").

Claim Summary: Claim 1 has been amended to include the subject matter of Claim 5. Claim 1 sets forth:

> 1. An examination assistant device for use in examining part of a quartz product of a semiconductor processing apparatus by holding a process solution including an etching solution in contact with the part and then analyzing the process solution to identify a metal impurity contained in the part, the quartz product being a pole member having a plurality of grooves for supporting target substrates to be processed in the semiconductor processing apparatus,
>
> the device being configured to treat, as an examination objective portion, a portion of the pole member present between a pair of concave portions, which are two of the grooves, the device comprising:
>
> a pair of end plates configured to engage with the pair of concave portions;
>
> a frame connecting the pair of end plates; and
>
> a solution receiver disposed between the pair of end plates, the solution receiver having dimensions for storing the process solution in a predetermined amount to hold the process solution in contact with the examination objective portion to etch the examination objective portion.

Amended Claim 1 combines pending Claim 1 with the claim element of pending Claim 5 along with additional clarifications in light of the Examiner's indication concerning the preamble.

Amended Claim 13 includes the same amendments as made to Claim 1.

Amended Claim 21 presents additional clarifications.

As clarified in Claim 1, the examination assistant device recited is for use in examining a pole member including a plurality of grooves for supporting target substrates to be processed in a semiconductor processing apparatus, and is configured to treat, as an examination objective portion, a portion of the pole member present between a pair of concave portions, which are two of the grooves.

In other words, this device is designed to examine a specific portion of a specific member; which relates to the problem being solved (i.e., to identify a metal impurity contained in the part). In order to address this problem, the claimed solution receiver has dimensions for storing the process solution in a predetermined amount to hold the process solution in contact with the examination objective portion to etch the examination objective portion. Accordingly, the respective portions of the examination assistant device have dimensions preset to meet a specific portion of the specific member (e.g., a part of a pole member) being evaluated.

Indeed, the examiner's attention is invited to Applicants' Figures 5A-5C showing the placement of an examination assistant device 3 on a supporting strut 21 of a wafer boat 2. The placement thereon means that, as shown in Figure 5C, an etching solution can be applied to etch a part of the supporting strut 21 where the wafer would contact. Thus, as noted in the specification on pages 22 and 23, metal contamination of a new wafer boat or a refurbished wafer boat can be performed without the crushing of the supporting strut 21 and destruction of the wafer boat.

The claimed features and these concomitant advantages represent, in view of the deficiencies in the applied art, more than a predictable result. Recent guidelines from the

Patent Office regarding *KSR* published in Federal Register vol. 75, No. 169 (September 1, 2010) indicate in Example 4.2 that:

> Thus the Federal Circuit stated that even if all elements of the claimed invention had been taught by the prior art, the claims would not have been obvious because the combination yielded more than predictable results.
>
> The Federal Circuit's discussion in *Crocs* serves as a reminder to Office personnel that merely pointing to the presence of all claim elements in the prior art is not a complete statement of a rejection for obviousness. In accordance with MPEP § 2143 A(3), a proper rejection based on the rationale that the claimed invention is a combination of prior art elements also includes a finding that results flowing from the combination would have been predictable to a person of ordinary skill in the art. MPEP § 2143 A(3). If results would not have been predictable, Office personnel should not enter an obviousness rejection using the combination of prior art elements rationale, and should withdraw such a rejection if it has been made.

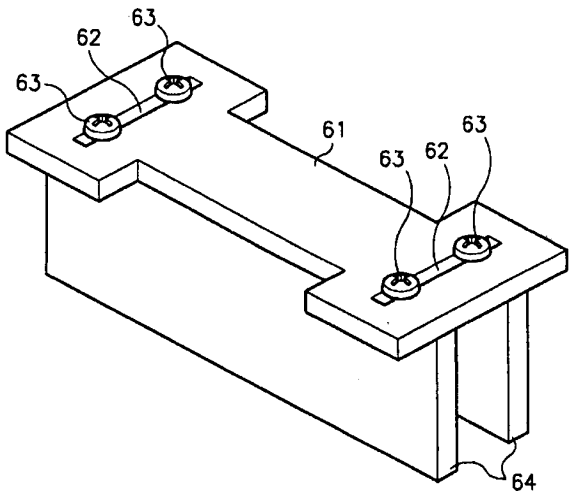
Art Deficiencies: In rejecting Claims 1-10, 12-18, and 21-23 under 35 U.S.C. § 103(a), the Office Action merely relies on Marumo for teaching a quartz member and a method for metal analysis using the quartz member, but acknowledges that Marumo fails to disclose the configuration of the examination assistant device recited in the claims. The Office Action relies on Ju for teaching the configuration of an examination assistant device.

As discussed in detail below, Ju fails to cure the deficiencies of Marumo. Claim 1 as noted above includes:

> a pair of end plates configured to engage with the pair of concave portions;
> a frame connecting the pair of end plates; and
> ***a solution receiver*** disposed between the pair of end plates, the solution receiver ***having dimensions*** for storing the process solution in a predetermined amount ***to hold the process solution in contact with the examination objective portion*** to etch the examination objective portion.

Ju describes a defect check tool that checks for warp and deformation of slot bars of semiconductor wafer boats to prevent damage to wafers. The tool of Ju has no solution receiver. The tool of Ju has nothing to do with an examination assistant device for

identifying metal impurities in a quartz product. Reproduced below is the defect check tool of Ju.



In view of the configuration of the defect check tool of Ju, the examiner will appreciate that the defect check tool of Ju can **not** hold a solution therein, as it has no enclosed volume which could possibly hold a solution.

Therefore, a combination of Marumo and Ju (if combined) would not meet all of the features recited in Claims 1 and 9.

For this reason alone, Claims 1-4, 6-8, 10, 12-18, and 21-23 should be passed to allowance.

Moreover, Marumo is directed to determining a level of chemical impurities in a quartz boat. There would have no need for a device, as in Ju, that slides between adjacent slots of a wafer boat to determine structural warping of slot bars of that wafer boat. In other words, one of ordinary skill in the art would have no motivation to add the defect check tool of Ju to the quartz analysis system of Marumo. Accordingly, there is no articulated reasoning with some rational underpinning to support the adding of the defect check tool of Ju to the

quartz analysis system of Marumo in order to explain why the claimed invention (a solution receiver holding the process solution) would have been obvious.

Indeed, recent guidelines regarding *KSR* published in Federal Register vol. 75, No. 169 (September 1, 2010) (see Example 4.5) both indicate that:

> The key to supporting any rejection under 35 U.S.C. 103 is the clear articulation of the reason(s) why the claimed invention would have been obvious. The Supreme Court in KSR noted that the analysis supporting a rejection under 35 U.S.C. 103 should be made explicit. The Court quoting In re Kahn 41 stated that " '[R]ejections on obviousness ***cannot be sustained by mere conclusory statements***; instead, there ***must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.***"' [Emphasis added.]

Moreover, the recent guidelines noted in Example 4.5 that:

> Office personnel should note that although the Federal Circuit invoked the idea of common sense in support of a conclusion of obviousness, it did not end its explanation there. Rather, the court explained why a person of ordinary skill in the art at the time of the invention, in view of the facts relevant to the case, ***would have found the claimed inventions to have been obvious***. [Emphasis added.]

For this additional reason, Claims 1-4, 6-8, 10, 12-18, and 21-23 should be passed to allowance.

Independent method Claim 13 is also not obvious over Marumo in view of Ju. Claim 13 defines:

> 13. An examination method for examining part of a quartz product of a semiconductor processing apparatus by use of a process solution including an etching solution, the quartz product being a pole member having a plurality of grooves for supporting target substrates to be processed in the semiconductor processing apparatus, the method comprising:
>
> preparing an examination assistant device configured to treat, as an examination objective portion, a portion of the pole member present between a pair of concave portions, which are two of the grooves, the device comprising a pair of end plates configured to engage with the pair of concave portions, a frame connecting the pair of end plates, and a solution receiver disposed between the pair of end plates, such that the solution receiver has dimensions for storing the process solution in a certain amount to hold the process solution

in contact with the examination objective portion and to etch the examination objective portion,

placing the examination assistant device on the pole member such that the pair of end plates engages with the pair of concave portions and the examination objective portion is positioned within the solution receiver;

causing the process solution within the solution receiver to be in contact with the examination objective portion for a predetermined time, thereby performing etching on the examination objective portion; and

operating an analyzer to analyze the process solution used for the etching to identify a metal impurity contained in the examination objective portion.

As discussed above with respect to Claims 1 and 9, Marumo and Ju fail to disclose an examination assistant device having a solution receiver with dimensions for storing the process solution in a certain amount to hold the process solution in contact with the examination objective portion and to etch the examination objective portion, as claimed. Further, Marumo and Ju fail to teach a method for examining an objective portion comprising preparing such a device, as claimed. Accordingly, it is respectfully requested that the examiner consider the process elements set forth in independent Claim 13 (and independent Claim 21) drawn to a method, and not group the analysis of independent Claims 13 and 21 in with the analysis of the device claims in considering the patentability of the process elements set forth.

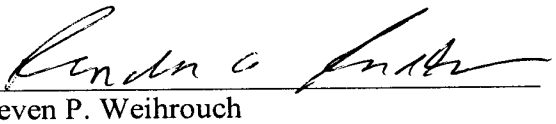
Indeed, when properly considered, amended Claims 13 and 21 would not have been obvious at the time of the invention over Marumo and Ju, as neither reference would (1) prepare the claimed examination assistant device, nor (2) place the examination assistant device on a pole member having a plurality of grooves for supporting target substrates, nor (3) cause the process solution within the solution receiver to be in contact with the examination objective portion.

For all of these reasons, the art rejections should be removed, and the pending claims passed to allowance.

Conclusion: In view of the present amendment, the pending claims are believed to be in condition for allowance. An early and favorable action to that effect is, therefore, respectfully requested.

Respectfully submitted,

OBLON, SPIVAK, McCLELLAND,
MAIER & NEUSTADT, L.L.P.



Steven P. Weihrouch
Attorney of Record
Registration No. 32,829

Ronald A. Rudder, Ph. D.
Registration No. 45, 618

Customer Number
22850

Tel: (703) 413-3000
Fax: (703) 413 -2220
(OSMMN 07/09)